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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/607,871 06/30/00 SENYK

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EXAMINER

MCKINNON, T

ART UNIT

PAPER NUMBER

3743

DATE MAILED:

06/26/01

QM02/0626
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Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/607,871

Applicant(s)

SENYK ET AL

Examiner

Terrell L Mckinnon

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 June 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: _____

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DETAILED ACTION

Drawings

The drawings are objected to under 37 CFR 1.83(a) because they fail to show the first and second heat transfer plates in fluid communication with each other as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Correction is required.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-7, 8-16, 18-25, 27, 28, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohashi et al. (U.S. 5,764,483) in view of Van Brocklin et al. (U.S. 6,047,766).

Ohashi discloses a cooling unit and method for electronic equipment comprising:

- coupling a first heat transfer plate (14) to an electronic device (12) in a first part of a portable computing device (10);
- a second heat transfer plate (16 and 36) in a second part of the computing device (8) coupled to the first heat transfer plate;
- a close loop flexible (plastic, rubber) tube (18) that fluidly joins the first and second heat transfer plates together;

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- the use of a heat transfer medium (water, oil, liquid refrigerant);
- the use of a pump (40) coupled to the tube, wherein it would have been obvious to one of ordinary skill in the art at the time of the invention for the pump to circulate the heat transfer fluid at a rate of 1 milliliter/second to 10 milliliter/second to efficiently cooling the electronic components;
- the use of a disconnect connection (44a and 44b);
- the heat transfer plate comprises a plate-fin type liquid heat transfer plate; and
- the use of extensively dissipating heat (10 watts to 50 watts) at high capacities from the heat radiating plate (column 2, lines 45-50).

Ohashi fails to disclose sensing the temperature of the electronic device and causing the fluid to move when the threshold temperature is detected.

3. However, Van Brocklin teaches the use of cooling notebook computers comprising;

- a logic circuit (80) comprising a temperature sensor (120) that senses the temperature of the electronic device, which causes fluid to move when the threshold temperature is, detected (column 2, lines 64-66).

4. Given the teachings of Van Brocklin, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the cooling unit of Ohashi with a temperature sensor that sensing the temperature of the electronic device, and

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initiates fluid movement when the threshold temperature is detected. Doing so would provide an optimal condition of cooling electronic devices.

5. Claims 7, 17, 26, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohashi in view of Van Brocklin as applied to claims above, and further in view of Mizuno (U.S. 5,333,676).

Ohashi modified invention discloses all of the claimed limitations except for a fluid container coupled to a tube having a sensor for sensing when the fluid is low in a fluid container.

6. However, Mizuno teaches a cooling system for electronic devices comprising;

- a fluid container (14) coupled to a tube having a sensor (21) for sensing then the fluid is low in a fluid container.

7. Given the teachings of Mizuno, it would have been obvious to one of ordinary skill in the art at the time of the invention to further modify the cooling system of Ohashi with a fluid container coupled to a tube having a sensor for sensing when the fluid is low in a fluid container. Doing so would provide a safe and efficient external liquid cooling means, wherein electronic components are cooled to efficient operating temperatures.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Burward-Hoy, Kobayashi, Fujisaki et al., and Chien.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Terrell L Mckinnon whose telephone number is 703-305-


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0059. The examiner can normally be reached on Monday -Thursday and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ira Lazarus can be reached on 305-1935. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7764 for regular communications and 703-308-7764 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1148.


Ira S. Lazarus
Supervisory Patent Examiner
Group 3700

TM

June 22, 2001